A Unit 09: Drivetrain Design

Content Area: **Science**
Course(s): **Robotics A**
Time Period: **Marking Period 1**
Length: **3**
Status: **Published**

Standards

SCI.9-12.HS-ETS1-1	Analyze a major global challenge to specify qualitative and quantitative criteria and constraints for solutions that account for societal needs and wants.
SCI.9-12.HS-ETS1-3	Evaluate a solution to a complex real-world problem based on prioritized criteria and trade-offs that account for a range of constraints, including cost, safety, reliability, and aesthetics, as well as possible social, cultural, and environmental impacts.
SCI.9-12.HS-ETS1-2	Design a solution to a complex real-world problem by breaking it down into smaller, more manageable problems that can be solved through engineering.

Enduring Understandings

- Physics and geometry play a large role in the design of a moving system and can be used to predict outcomes before testing.
- The intended function of a design and the problems it is required to solve should be one of the major factors considered when making choices for implementation.

Essential Questions

1. How can you use friction to your advantage when you create your robot drivetrain?
2. How can you use geometry to help select the most efficient drivetrain for your robot?

Resources

- Unit Guide
- Paper
- Pencils
- Rulers
- Internet Access
- Dictionaries
- VEX Robotics Kit
- Computers with Autodesk Inventor
- Storage containers

- Online Resources